Perinatal Measure Set
Coming Soon to a Hospital
Near You: Using Data to Drive Change

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Perinatal Care (PC) Core Measures

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Perinatal Care Overview

- **2007** — Board of Commissioners recommended changing Pregnancy and Related Conditions (PR) measure set with and expanded set based on current evidence
- **2009** — Technical Advisory Panel (TAP) convened in February to select the replacement measures from the National Quality Forum endorsed measures
- **August 1, 2012** — Final rule posted
- **July 1, 2013** — Mandatory reporting was required on 6 measures for hospitals with >1100 births
- **2016** — Data collection required for all hospitals >300 births and PC-05a was dropped
PC Core Measures

- PC-01 Elective Delivery
- PC-02 Cesarean Section
- PC-03 Antenatal Steroids
- PC-04 Health Care-Associated Bloodstream Infections in Newborns
- PC-05 Exclusive Breast Milk Feedings
- PC-05a Exclusive Breast Milk Feeding Considering Mother’s Choice
Two Distinct Populations
  • Mothers
  • Newborns

Consist of Five Measures in 3 Domains of Care:
  • Assessment and Screening
  • Prematurity Care
  • Infant Feeding
PC-01 Elective Delivery

• **Original Performance measure/Source:** Hospital Corporation of America – Women’s and Children’s Clinical Services

• **Rationale**
  • Elective inductions result in more cesarean sections
  • American College of Obstetricians and Gynecologist (ACOG) and American Academy of Pediatrics (AAP) Standard
  • Significant short-term newborn morbidity
PC-01 Numerator and Denominator

Patients with elective deliveries

_______________________________

Patients delivering newborns with
> 37 weeks and < 39 weeks of gestation completed
PC-01 Denominator Populations

- **Included Populations**
  - Principal or other diagnosis codes for planned cesarean section in labor

- **Excluded Populations**
  - Principal or other Diagnosis Codes for Conditions Possibly Justifying Elective Delivery prior to 39 weeks gestation
  - < 8 years of age
  - > 65 years of age
  - Length of Stay > 120 days
  - Patient’s enrolled in Clinical Trials
  - Gestational Age < 37 or > 39 weeks
  - Prior uterine surgery (inclusions)
    - Prior Classical cesarean section (vertical incision into upper uterine segment)
    - Prior myomectomy
    - Prior surgery with perforation
    - History of uterine window
    - History or uterine rupture
PC-01 Numerator Populations

• **Included Populations**
  - Principal or other diagnosis codes for
    - Medical induction of labor
    - Cesarean section while not in labor or experiencing Spontaneous Rupture of Membranes

• **Excluded Populations**
  - None
PC-01 Numerator Data Elements

• ICD-10 Principal and Other procedure Codes

• Labor
  • Inclusions
    • Active Labor
    • Spontaneous labor
    • Early Labor
  • Exclusions
    • Prodromal Labor
    • Latent labor

• Spontaneous Rupture of Membranes
PC-02  Cesarean Section

• Original Performance Measure/Source Developer: California maternal Quality Care Collaborative

• Rationale
  • Skyrocketing increase in rates
  • Most variable portion of CS rate
  • Performance Improvement Opportunity
Patients with cesarean sections

Nulliparous patients delivered of a live term singleton newborn in vertex presentation
PC-02 Denominator Populations

• **Included Populations**
  • Nulliparous patients
  • Principal or other diagnosis codes for planned cesarean section in labor
  • And with a delivery of a newborn with 37 weeks or more of gestation completed

• **Excluded Populations**
  • Principal or other Diagnosis Codes for contraindications to vaginal delivery
  • < 8 years of age
  • ≥ 65 years of age
  • Length of Stay > 120 days
  • Patient’s enrolled in Clinical Trials
  • Gestational Age < 37 weeks
PC-02 Numerator Populations

- **Included Populations**
  - Principal or other diagnosis codes for cesarean section

- **Excluded Populations**
  - None
PC-03 Antenatal Steroids

- **Original Performance Measure/Source Developer:** Providence St Vincent’s Hospital/Council of Women and Infant’s Specialty Hospitals
- **Rationale**
  - National Institute of Health 1994 recommendations
  - Reduce the risk of respiratory distress syndrome, prenatal mortality and other morbidities
PC-03 Numerator and Denominator

Patients with antenatal steroid therapy initiated prior to delivering preterm newborns

Patients delivering live preterm newborns with $\geq 24$ weeks and $< 32$ weeks gestation completed
PC-03 Denominator Populations

- Included populations: NA
- Excluded populations
  - < 8 years of age
  - ≥ 65 years of age
  - Length of Stay > 120 days
  - Patient’s enrolled in Clinical Trials
  - *Documented Reason for not Initiating Antenatal Steroid Therapy*
    - Principal or other Diagnosis Codes for Fetal Demise
    - Gestational Age < 24 weeks or ≥ 32 weeks
PC-02 Reason for Not Initiating Antenatal Steroid Therapy

- Chorioamnionitis
- Documentation as to Why therapy was not initiated (MD progress notes critical)
  - No time
  - Previously administered
PC-03 Numerator Populations

- Included Populations
  - Antenatal steroid therapy initiated (Does not require full course)

- Excluded Populations
  - None
PC-04 Health Care-Associated Bloodstream Infections in Newborns

- **Original Performance Measure/Source Developer:** Agency for Healthcare Research and Quality

- **Rationale:**
  - Rates range from 6% to 33%
  - Increase mortality, length of stay and hospital costs
  - Effective preventive measures available
PC-04 Numerator and Denominator

Newborns with septicemia or bacteremia

Liveborn newborns
PC-04 Denominator Populations

- **Included Populations**
  - Other Diagnostic Codes for birth weight between 500 and 1499 g
  - Other Diagnostic Codes for birth weight > 1500g who experience one or more of the following:
    - Experienced death’
    - Principal or other Procedure Codes for Major surgery
    - Principal or Other Procedure Codes for mechanical ventilation
    - Transferred in from another acute care hospital within 2 days of birth

- **Excluded Populations**
  - Principal Diagnosis Code for septicemias or bacteremias
  - Other Diagnosis Code for septicemias or bacteremias or blood stream infection present on admission
  - Length of Stay < 2 days
  - Enrolled in clinical Trials
PC-05 Exclusive Breast Milk Feeding

• Original Performance Measure/Source Developer: California Maternal Quality Care Collaboration

• Rationale:
  • Goal of World Health Organization (WHO), Department of Health and Human Services (DHHS), American Academy of Pediatrics (AAP) and American College of Obstetricians and Gynecologist (ACOG)
  • Numerous benefits of the newborn
Newborns that were fed breast milk only since birth

Single term newborns discharge alive from the hospital
PC-05 Denominator Populations

- **Included Populations:** Principal Diagnosis code for singleton liveborn newborn
- **Excluded Populations:**
  - Admitted to the NICU
  - Other Diagnosis Code for Galactosemia
  - Principal or other procedure code for parenteral infusion
  - Experienced death
  - Length of Stay >120 days
  - Enrolled in clinical trials
  - Documented reason for Not exclusively feeding breast milk
  - Parents transferred to another hospital
  - Other Diagnosis Codes for premature newborns
SC Birth Outcome Initiative Data Team: Using Data to Drive Change

Aunyika Moonan, PhD, CPHQ
Director, Quality Measurement Services
South Carolina Hospital Association
Overview

Perinatal Measure alignment

Walk you through the contents of the BOI Quarterly and Annual Hospital Report
SC Birth Outcomes Initiative Data Team

- **Chris Finney, MS**, Program Manager, South Carolina Revenue and Fiscal Affairs Office, Health and Demographics

- **Sarah Gareau, DrPH**, Senior Research Associate, University of South Carolina, Institute for Families in Society Division of Medicaid Policy Research

- **Ana Lòpez-DeFede, PhD**, Research Professor, University of South Carolina, Institute for Families in Society Division of Medicaid Policy Research

- **Aunyika Moonan, PhD, CPHQ**, Director, Quality Measurement Services, South Carolina Hospital Association

- **Daniela Nitcheva, PhD**, Biostatistics and Data Quality Branch Manager, Division of Biostatistics, South Carolina Department of Health and Environmental Control

- **Michael Smith, MSPH**, Maternal and Child Health Epidemiologist, Director, Division of Research and Planning, Bureau of Maternal and Child Health, South Carolina Department of Health and Environmental Control
Perinatal Measures
Alignment
Perinatal Measures

- Number of new hospitals needing to pull these measures
- All important, Prioritize

- PC-01: Elective delivery measures-yes
- PC-02: Cesarean Section-yes
- PC-03: Antenatal Steroids
- PC-04: Health Care Associated Blood Stream Infections in Newborns-Collaborative
- PC-05: Breast Milk Feeding-Baby Friendly
Baby Friendly Hospitals

SOUTH CAROLINA

Tidelands Waccamaw Community Hospital, Murrells Inlet, SC (5/13)
Roper St. Francis Mount Pleasant Hospital (Mount Pleasant, SC) (7/13)
Medical University of South Carolina, Charleston, SC (09/13)
AnMed Health, Anderson, SC (06/14)
Greenville Memorial Hospital, Greenville, SC (07/14)
St. Francis Eastside, Greenville, SC (09/14)
Palmetto Health Richland Hospital, Columbia, SC (06/15)
Piedmont Medical Center, Rock Hill, SC (09/15)
Tidelands Georgetown Memorial Hospital, Georgetown, SC (10/13)

• 32.6% of all babies born in South Carolina are in one of these hospitals with 30.6% being covered by Medicaid.
SC BOI Quarterly and Annual Hospital Report

Using Data to Monitor Birth Outcomes through Quality Improvement
1st BOI Webinar Offered - Other resources

Should we worry about C-Section Rates in SC?

Sara Gareau, DrPH
Senior Research Associate
USC Institute for Families in Societies
Division of Medicaid and Policy Research

Slides on SC DHHS website page
https://www.scdhhs.gov/organizations/boi
Purpose

• Focus on supporting intended vaginal delivery

• Continue tracking progress through quarterly and annual hospital reports with the goal of decreasing the % of Primary C-Sections for first-time mothers overall and at 39-40 weeks gestation

• Provide reports to CEO, Quality, Perinatal, CMO, Regional etc. point of contacts on a quarterly basis
Table of Contents of Data Packets

- Data Source
- Definitions
- Notes for the interpretation of findings
- Quartile information for the perinatal level of the hospital being reported (Quartile and Annual)
- Part A: Quarterly comparisons for your specific birthing facility and the state (summary report and data tables)
- Part B: Annual comparisons for a specific birthing facility and the state (summary report and data tables)
- Detailed information on The Joint Commission criteria and data sources
Data Source

A: SC DHEC, Division of Biostatistics, Birth Certificate Data
   • Gestation-clinical
   • Birthweight-VL, ML, normal
   • Total Inductions at 37-38 weeks gestation
   • Total Cesarean Sections
   • Primary Cesarean sections (limited to first time moms)
   • Repeat Cesarean sections

   These data are based on birth certificate data submitted to DHEC by delivering hospitals and are not based on billing codes

B: Linkage of the UB-04 all payer data base AND the Vital Records Birth File
   • All measures with the exclusions applied

   • All data sources linked back to Medicaid recipient records
Definitions

- Birth Facility-not freestanding
- Difference-Absolute
- Induction-37-38 wks gestation
- NICU stays-NICU levels 3 or 4
- Pay Source-expected
- Quarter-CY
- Relative Percentage Change-(-) change indicates better outcome
- The Joint Commission Exclusion Criteria: PC-01 and PC-02
Additional Notes

• Comparing Qtr 1, 2011 to Qtr 4, 2014 and 2011-2014

• Comparing two stand alone quarters-look annually too
Quartile information for the perinatal level of the hospital being reported-Benchmarking

**Measures:**
- Elective Inductions at 37-38 Weeks
- Joint Commission Early Elective Delivery Measure (PC-01)
- Primary C-Sections at 37+ weeks with the exclusions applied (PC-02)
- Primary C-Sections at 39-40 weeks with the exclusions applied

**Quartiles:** The quartiles of a ranked set of data values divide the data set into four equal groups. Typically, each group represents 25% of hospitals for each perinatal level.
- The **FOURTH** Quartile represents the highest 25% of hospitals, or the highest set of percentages for a specific measure.
- The **FIRST** Quartile represents the lowest 25%, or the lowest set of percentages for a specific measure.
# Quartile Information: 2014
(Ex: Perinatal Levels II and IIIE)

<table>
<thead>
<tr>
<th>Measure</th>
<th>Your hospital %</th>
<th>Minimum</th>
<th>First Quartile</th>
<th>Median</th>
<th>Third Quartile</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elective Inductions</td>
<td>2.63%</td>
<td>0.00%</td>
<td>1.36%</td>
<td>2.78%</td>
<td>3.89%</td>
<td>18.48%</td>
</tr>
<tr>
<td>The Joint Commission Early Elective Delivery</td>
<td>14.91%</td>
<td>13.56%</td>
<td>19.29%</td>
<td>22.61%</td>
<td>30.01%</td>
<td>53.26%</td>
</tr>
<tr>
<td>Primary C-Section with exclusions removed</td>
<td>28.64%</td>
<td>13.92%</td>
<td>23.97%</td>
<td>28.08%</td>
<td>34.42%</td>
<td>44.83%</td>
</tr>
<tr>
<td>Primary C-Sections at 39-40 weeks with exclusions removed</td>
<td>29.20%</td>
<td>14.00%</td>
<td>23.88%</td>
<td>28.79%</td>
<td>35.39%</td>
<td>50.00%</td>
</tr>
</tbody>
</table>

Lower rate is a better rate
Reported Measures for Data Packet

• Birthweight
• Gestation
• Overall Inductions at 37-38 Weeks
• Primary C-Sections at 37+ weeks with and without exclusions applied (PC-02)
• Primary C-Sections at 39-40 weeks with and without exclusions applied
• Repeat C-Sections
• Total C-Sections with and without exclusions applied
• Elective Inductions at 37-38 weeks gestation
• NICU Stays Among Deliveries at 37-38 Weeks
• The Joint Commission Early Elective Delivery (PC-01) Measure*

*Disclaimer: Exclusions cannot be made for active labor, spontaneous rupture of membranes, clinical trials and prior uterine surgery.
<table>
<thead>
<tr>
<th>Measure</th>
<th>Outcome</th>
<th>Birth</th>
<th>All payers</th>
<th>Medicaid</th>
<th>All payers</th>
<th>Medicaid</th>
<th>All payers</th>
<th>Medicaid</th>
<th>All Payers</th>
<th>Medicaid</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2011</td>
<td>2014</td>
<td>Absolute difference between 2014 and 2011 (+/-)</td>
<td>Relative Percentage Change 2014 and 2011 (+/-)</td>
<td></td>
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</tr>
</tbody>
</table>
Measures
(Quarterly Trends)
<table>
<thead>
<tr>
<th>BIRTH OUTCOME</th>
<th>ALL PAYERS Q1 2011</th>
<th>MEDICAID Q1 2011</th>
<th>ALL PAYERS Q4 2014</th>
<th>MEDICAID Q4 2014</th>
<th>Difference Between Q4 2014 and Q1 2011</th>
<th>Relative Percentage Change (Qtrs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Elective Induction</td>
<td>9.62%</td>
<td>8.98%</td>
<td>3.49%</td>
<td>3.73%</td>
<td>-6.13%</td>
<td>-5.25%</td>
</tr>
<tr>
<td>2. The Early Elective Delivery (PC-01) Measure</td>
<td>33.38%</td>
<td>29.43%</td>
<td>21.16%</td>
<td>19.13%</td>
<td>-12.22%</td>
<td>-10.30%</td>
</tr>
<tr>
<td>3. Primary C-Sections at 37+ Weeks w/ excl. (PC-02)</td>
<td>28.81%</td>
<td>27.58%</td>
<td>27.69%</td>
<td>26.80%</td>
<td>-1.12%</td>
<td>-0.78%</td>
</tr>
<tr>
<td>4. Primary C-Sections at 39-40 Weeks w/ excl.</td>
<td>28.62%</td>
<td>27.58%</td>
<td>27.34%</td>
<td>26.68%</td>
<td>-1.28%</td>
<td>-0.90%</td>
</tr>
<tr>
<td>5. Total C-Sections w/ excl.</td>
<td>18.97%</td>
<td>18.39%</td>
<td>17.64%</td>
<td>16.76%</td>
<td>-1.33%</td>
<td>-1.63%</td>
</tr>
</tbody>
</table>

(-%) is good!
Early Elective Deliveries for All Payers: The Joint Commission PC-01 Elective Delivery Measure (2), Overall Inductions at 37-38 Weeks, & Early Elective Inductions at 37-38 Weeks (1)

The Joint Commission Measure %

Overall Inductions at 37-38 Weeks %

Elective Induction at 37-38 Weeks %

Colored circles: Relative % decrease
Elective C-Section Deliveries for All Payers: Primary C-Sections at 37+ Weeks (PC-02), Primary C-Sections at 39-40 Weeks (4), and Total C-Sections with exclusions (5)

- Colored circles: Relative % decrease

Primary C-Sections at 37+ Weeks w/ excl.
-3.89%
-4.47%

Primary C-Sections at 39-40 Weeks w/ excl.
-7.01%

Total C-Sections w/ excl.
18.97%
17.64%
27.69%
27.34%

Elective C-Section Deliveries for Medicaid:
Primary C-Sections at 37+ Weeks, Primary C-Sections at 39-40 Weeks (4), and Total C-Sections with exclusions (5)

Colored circles: Relative % decrease

Primary C-Sections at 37+ Weeks w/ excl.
Primary C-Sections at 39-40 Weeks w/ excl.
Total C-Sections w/ excl.
Elective Delivery Measures (Annual Trends)
## Reported Measures

<table>
<thead>
<tr>
<th>BIRTH OUTCOME</th>
<th>ALL PAYERS 2011</th>
<th>MEDICAID 2011</th>
<th>ALL PAYERS 2014</th>
<th>MEDICAID 2014</th>
<th>Difference Between 2014 and 2011 ALL PAYERS</th>
<th>MEDICAID</th>
<th>Relative Percentage Change (Years) ALL PAYERS</th>
<th>MEDICAID</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Elective Induction at 37-38 weeks gestation</td>
<td>8.81%</td>
<td>8.38%</td>
<td>3.20%</td>
<td>3.18%</td>
<td>-5.61%</td>
<td>-5.20%</td>
<td>-63.68%</td>
<td>-62.05%</td>
</tr>
<tr>
<td>2. The Joint Commission Early Elective Delivery (PC-01)</td>
<td>33.05%</td>
<td>30.52%</td>
<td>23.49%</td>
<td>21.95%</td>
<td>-9.56%</td>
<td>-8.57%</td>
<td>-28.93%</td>
<td>-28.08%</td>
</tr>
<tr>
<td>3. The Joint Commission Primary C-Sections at 37+ Weeks w/ excl. (for 1st time mothers) (PC-02 check???)</td>
<td>29.21%</td>
<td>28.59%</td>
<td>28.10%</td>
<td>27.12%</td>
<td>-1.11%</td>
<td>-1.47%</td>
<td>-3.80%</td>
<td>-5.14%</td>
</tr>
<tr>
<td>4. Primary C-Sections at 39-40 Weeks w/ excl. (for 1st time mothers)</td>
<td>29.68%</td>
<td>28.89%</td>
<td>27.99%</td>
<td>27.43%</td>
<td>-1.69%</td>
<td>-1.46%</td>
<td>-5.69%</td>
<td>-5.05%</td>
</tr>
<tr>
<td>5. Total C-Sections w/ exclusions.</td>
<td>18.82%</td>
<td>18.25%</td>
<td>18.19%</td>
<td>17.41%</td>
<td>-0.63%</td>
<td>-0.84%</td>
<td>-3.35%</td>
<td>-4.60%</td>
</tr>
</tbody>
</table>

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USC Institute for Families in Society | Division of Medicaid Policy Research
Elective Deliveries for All Payers: The Joint Commission PC-01 Elective Delivery Measure (2), Overall Inductions at 37-38 Weeks, & Early Elective Inductions at 37-38 Weeks (1)

Colored circles: Relative % decrease
Elective Deliveries for Medicaid: The Joint Commission PC-01 Elective Delivery Measure (2), Overall Inductions at 37-38 Weeks, & Early Elective Inductions at 37-38 Weeks (1)

Colored circles: Relative % decrease
Elective C-Section Deliveries for All Payers:
The Joint Commission PC-02 Primary C-Sections at 37+ Weeks (3), Primary C-Sections at 39-40 Weeks (4), and Total C-Sections(5)

Colored circles: Relative % decrease

- Primary C-Sections at 37+ Weeks w/ excl.
- Primary C-Sections at 39-40 Weeks w/ excl.
- Total C-Sections w/ excl.
Elective C-Section Deliveries for Medicaid:
Primary C-Sections at 37+ Weeks, Primary C-Sections at 39-40 Weeks(4), and Total C-Sections with exclusions(5)

Colored circles: Relative % decrease
Summary

• Importance of data input by birth clerks, coders, documentation by physicians, nursing and other medical staff etc. Mirror results?

• Data is as good as we get

• Almost all measures have improved (absolute/relative and quarterly/annually)

• Total C-section measure/Primary C-section 1st time moms-opportunity exist

• Successful collaboration and partnership-PROUD!
For additional information:

For hospital-specific questions, please contact:
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